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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/264,719	03/09/1999	TETSUNOBU KOCHI	35.C13389	3618

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EXAMINER

WU, DOROTHY

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 12/01/2003

15

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/264,719

Applicant(s)

KOCHI ET AL.

Examiner

Dorothy Wu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8 and 9 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 8 and 9 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 8 and 9 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

2. Claim 8 is objected to because of the following informalities: the claim recites the limitation "internally supplied voltage" instead of "internally supplied voltage." Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of Williams et al, U.S. Patent 3,845,295.

Regarding claim 8, the admitted prior art teaches a solid state image pickup element (page 5, line 10) in one-chip formation, which reads on formation on a single semiconductor substrate (page 5, lines 14-15), comprising a pixel including a photoelectric conversion element which includes an accumulation area (photodiode area) where signal charge generated by

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photoelectric conversion is accumulated (page 5, line 27-page 6, line 1), a transfer switch (transfer gate 701) which transfers the signal charge accumulated in said accumulation area (page 5, line 24-page 6, line 1), a floating diffusion portion (floating diffusion area 711) which receives the signal charge through said transfer switch (page 5, line 27-page 6, line 1), and a reset switch (reset gate 712) which resets an electric potential of said floating diffusion portion (floating diffusion area 711) (page 6, lines 6-9). The admitted prior art does not teach a first terminal which is connectable externally, a second terminal which is connectable externally, a first wiring which applies a voltage at said first terminal to said reset switch so that said reset switch is controlled according to the applied voltage at said first terminal and an internally supplied voltage, and a second wiring which applies a voltage at said second terminal to said transfer switch so that said transfer switch is controlled according to the supplied terminal at said second terminal and an internally supplied voltage.

Williams teaches a first terminal and a second terminal (terminals that may be switchably connected to $-3V$ or $-25V$, and $-1V$ or $-4V$) (Fig. 1). The power sources supplying $-3V$, $-25V$, $-1V$, and $-4V$ are not locally located, which reads on the terminals being connectable externally. Williams teaches a first wiring which applies a voltage at said first terminal to said reset switch (gate electrode 22). A control signal is inherent and necessary to indicate which voltage the means (arrows in Fig. 1) should pass to the reset switch (gate electrode 22), which reads on said reset switch being controlled according to the applied voltage ($-3V$ or $-25V$) at said first terminal and an internally supplied voltage (control signal to voltage source selection means, as depicted by arrows). Williams teaches a second wiring which applies a voltage at said second terminal to said transfer switch (gate electrode 16). A control signal is necessary to indicate which voltage

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the means (arrows in Fig. 1) should pass to the transfer switch (gate electrode 16), which reads on said transfer switch (gate electrode 16) being controlled according to the applied voltage (-1 V or -4V) at said second terminal and an internally supplied voltage (control signal to voltage source selection means, as depicted by arrows).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the sensing apparatus of the admitted prior art with the practice of controlling reset and transfer switches according to voltages supplied at terminals and internally supplied voltages taught by Williams to make an image sensing apparatus that transfers charge from the photodiodes or resets the photodiodes using multiply voltage sources and control means for selecting which voltage source shall be applied to the reset or transfer switch. One of ordinary skill would have been motivated to make such a modification to control the transfer or depletion of charge from a region when the image sensor is reading out or resetting pixels.

Regarding claim 9, Williams et al teaches a first voltage supplied to the first, reset terminal and a second voltage lower than the first voltage supplied to said second, transfer terminal (col. 3, lines 36-42, line 54-col. 4, line 11). The voltage potential setting circuit which generates a plurality of different electric power voltages is inherently taught.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dorothy Wu whose telephone number is 703-305-8412. The examiner can normally be reached on Monday-Friday, 9:00-5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Christensen can be reached on 703-308-9644. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-0377.

Donna M. Ulin

DW

November 26, 2003



ANDREW CHRISTENSEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600